The Reliquary

&

Illustrated Archæologist.

OCTOBER, 1896.

The Oil Lamp and its Contrivances.

THE mechanical arrangement by which the supply of oil to the wick in ancient and modern lamps has been regulated, may appear, at first sight, to be a somewhat trivial subject to discuss in a magazine devoted to scientific archæology. I think, however, we shall see that not only is it the chief function of the lamp, properly so called, but that it is the one great difficulty that has puzzled men of all races and in all times of which we have any record. Even now, with all our boasted civilization and science, no lamp is ideally perfect, for no lamp has yet been constructed that ensures absolute and complete combustion of the oil it is intended to consume, or rather to convert into light.

Before going further it will be advisable, in the first place, to consider what a lamp really is, and I think we may regard it simply as an appliance for converting oil into light; much in the

same way as a sheep has been described as a medium for the conversion of herbage into tallow and wool.

A lamp may be considered to consist of three essential parts, namely: (1) a reservoir for the oil, (2) a duct for the wick (the wick and its duct being practically one), and (3), an apparatus for suspending or supporting the whole of the working parts.

The reservoir, as we shall see, was originally the natural hollow of a shell, a depression formed in a stone, or an open shallow cup of pottery or metal, possessing no cover until the lamps began to improve in construction, when the advantage of excluding dust and dirt became obvious, and the reservoir developed into a closed receptacle.

As regards means of support or suspension, these also varied greatly, from the flat-bottomed stone lamps to the ornamental pedestal of to-day, and from the bit of twine wherewith to hang up a buckie shell, through the really pretty and artistic twisted iron hangers of the cruzie type to the varied forms of chain suspenders of our own time—useful, no doubt, but scarcely artistic.

These details are, however, not directly connected with the subject of the present article, though they form very important parts of the construction of the lamp. Pedestals and devices for suspension are common to many objects applied to domestic and general purposes, and are therefore not peculiar to lamps, but with the wick and its duct it is very different, for these, as I have hinted, form the *raison d'être* of the lamp.

Nearly all oils are uninflammable in the bulk—that is to say, a lighted match might be thrown with safety into a bucket full of any of them. Of course, such oils as give off a vapour explode—*i.e.*, ignite all at once, but that is another story, and is caused by the vapour commingling with the oxygen of the air, which proves the case of the wick, to which I am now going to refer.

In order, then, that the carbon of the oil may, by combustion, give light, it is requisite that it should combine with oxygen derived from atmospheric air, and in order to do this it is necessary to divide the molecules of carbon up in such a way as to combine readily with the air. For this purpose the appliance known as a wick was used, but by whom invented and how discovered we know not, but must leave this mystery, with many others, buried in the prehistoric past.

The wick, to be of any use, must consist of a bundle of longitudinal fibres, or what botanists term of vascular construction. This arrangement conducts the oil from the reservoir by capillary attraction. The wick is supported by a gutter, a duct, or a tube, and it should project just far enough beyond this to permit of the free access of the oxygen of the air to the divided particles of the carbon of the oil. Thus it is that a lamp only burns at the extreme end of the wick duct, and not throughout its whole length, even if it be, as it once always was, a mere gutter.

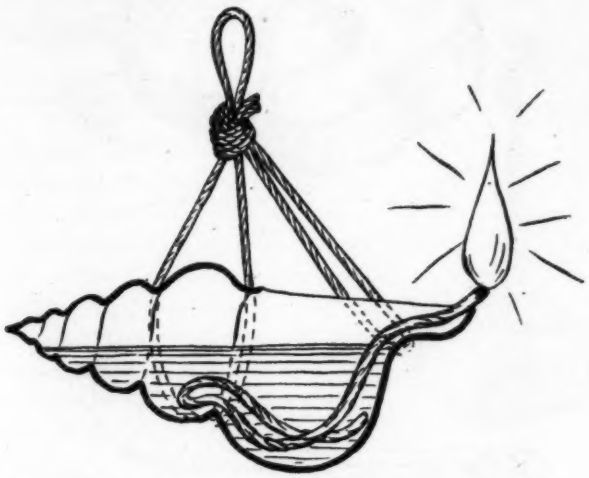

Fig. 1.—Section of "Buckie" Shell (*Fusus antiquus*) used as Lamp.

If the wick be too poorly supplied with oil, the flame dies out and the wick consumes and chars. If, on the other hand, too much oil flows up the wick, the carbon is too dense for combustion, and the lamp goes out. The happy medium in which the exact amount of oil required to feed the flame is conducted along the wick has never yet been attained, but the next best thing has been, and that is, a very slight excess of oil over the requirements of the flame. This brings us to our subject, namely, the mechanical arrangement for supplying this flow of oil, regulating it and allowing for the saving of the oil supplied in excess of the requirements of the flame.

With the probable or possible origin of the oil lamp we cannot

now deal, but I think we may take it that the earliest known lamp was a hollow stone, a shell of a mollusc, or, in fact, any object which would hold oil and not readily burn. I am myself inclined to think that a simple shell, say of a *Fusus* or a *Buccinum*. (see fig. 1), not only constituted the first lamp, but probably by its form suggested the appliance from which all subsequent lamps have sprung. There are allied shells in all parts of

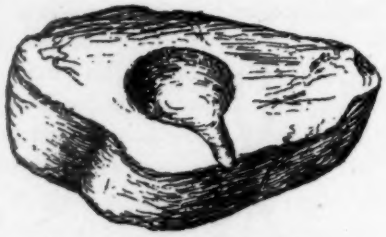

Fig. 2.—Open Cup Lamp of Stone.

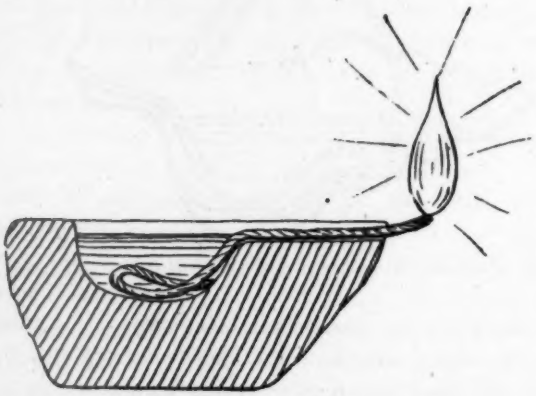

Fig. 2a.—Open Cup Lamp of Stone, shown in section.

the world; they possess the three essential features, viz., a reservoir, a wick duct, and capability for suspension, thus readily suggesting all that was required to meet a natural demand. Many shells are still used as lamps in various parts of the world by people who have as yet not been reached by the resources of civilisation.

Although the stone lamp (fig. 2) is more crude in form than the shell, it is higher in the grade of development, by reason of

the fact that it has been wrought by the hand of man into the required shape. It possesses a hollow for the oil, and a gutter for the wick. By tilting the stone forward or backward the flow of oil to the wick in the gutter can be regulated according to the amount of oil in the reservoir.

Fig. 3.—Open Cup Lamp of Iron, with hook for suspension, shown in section (Northern India).

The simple pan lamp of iron (fig. 3), in use by the poorest natives of Northern India, is perhaps the most primitive known contrivance of what we may call the iron age. It has no appliance whatever for regulating the flow of oil, nor for catching the inevitable drip. It is even behind the stone lamp and the buckie shell, but it is of iron, and must be regarded perhaps as a devolution rather than a stage in evolution.

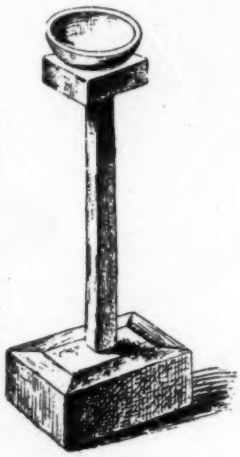

Fig. 4.

Fig. 4a.

Fig. 4b.

Open Cup Lamp of Earthenware, resting on wooden stand with hollow in upper surface; (a) showing oil vessel horizontal; (b) showing oil vessel tilted forward to carry the oil to the wick (Northern India).

Fig. 4 represents another lamp, also from Northern India, but in this instance the flow of oil to the wick is capable of being regulated by tilting the little open earthenware saucer, as desired, upon the hollowed wooden stand, which latter also catches the

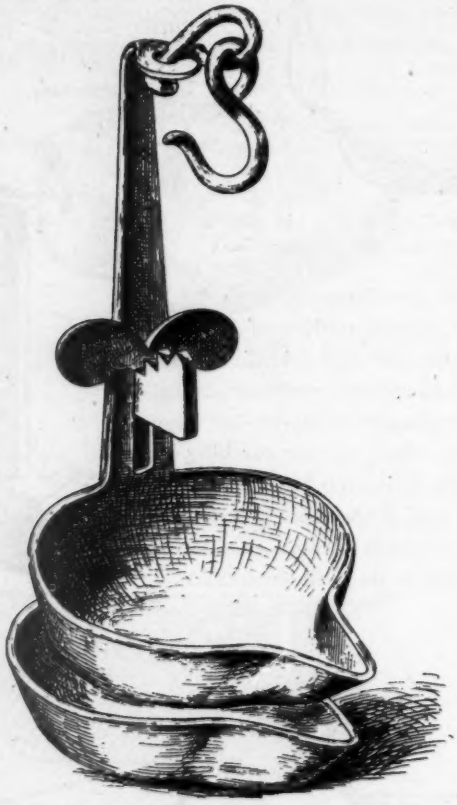

Fig. 5.—Scotch Cruzie, with open oil vessel and receptacle for catching superfluous drippings below.

overflow drip. This is perhaps the most primitive form of a complex lamp known.

What may perhaps be considered the true type of lamp, and the one in which the form of all our modern appliances for regulating the proper supply of oil is to be found, is the Scotch cruzie (fig. 5). I say Scotch, because it is in Scotland that

this form of lamp exists, or rather existed, in its most characteristic form, although cruzie-form lamps may be found all over Europe, and their allied forms all over the world. As to the age or the origin of the cruzie we cannot say very much here, but its form without the lower shell was known in Roman times, and may have been, and probably was, as old as the Etruscan period. The form, with sundry modifications, seems to have been pretty generally distributed over Europe, and the specimens figured and briefly described in this article represent but a small section of their numerous variations, and are simply selected as best illustrating the gradual evolution of the appliances for supplying the wick with as nearly as possible its exact requisite quantity of oil.

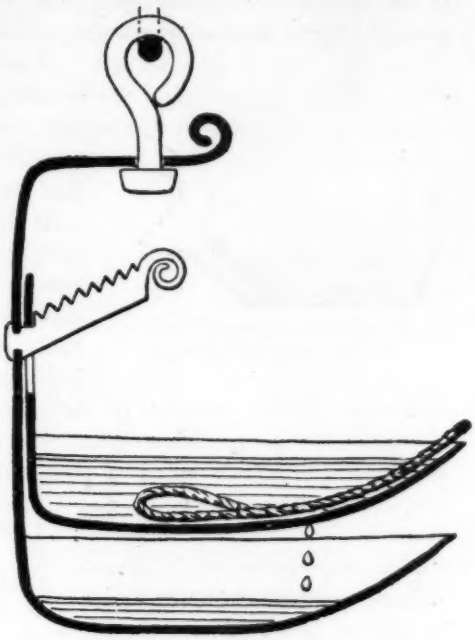

Fig. 5a.—Scotch Cruzie, shown in section, with upper shell horizontal and full of oil.

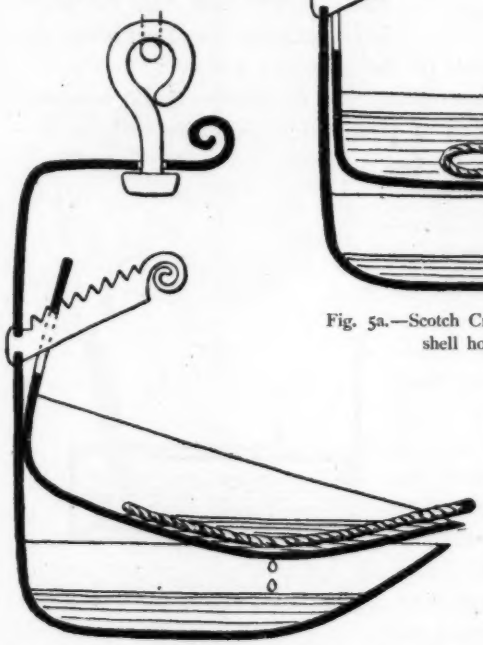

Fig. 5b.—Scotch Cruzie, shown in section, with upper shell tilted forward when the oil is nearly exhausted.

It is very remarkable that in examining the gradual transition

from the ancient to the modern lamp how unevenly, so to speak, the improvement runs. For example, the use of one oil receptacle, in which the overflow ran back into itself, was such a decided advance that it obtains everywhere in our own day.

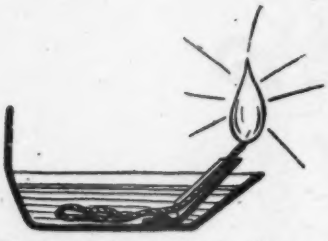

Fig. 6.—Iron Lamp with open oil reservoir and fixed wick carrier (Genoa).

The enclosed reservoir was another great step towards perfection; so also was the tube spout as against the open spout or gutter. And yet in different countries we find cross improvements in all directions. For example, the old Dutch spout lamp has a tube spout, enclosed reservoir, and probably at the time "all the latest improvements;" and yet it has the double or overflow reservoir of the primitive cruzie.

Again, the pretty Genoese lamp (fig. 6) has the single reservoir, but no trace of any cover to enclose it; whilst fig. 7 is a very simple tin lamp from Tuscany actually possessing a covered reservoir.

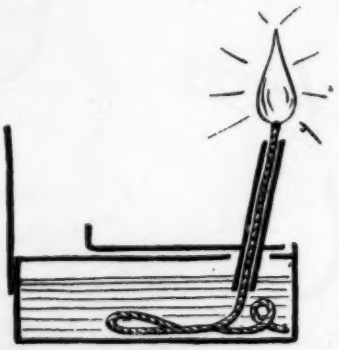

Fig. 7.—Tin Lamp with closed oil reservoir and sloping tube for wick (Tuscany).

To return to our cruzie, it consists of a double "shell," or pair of pointed bowls of iron, though rarely they are to be found of copper or brass, roughly beaten, or rather hammered out by hand in a mould made in a rough "whinstone." The lower shell is fixed to an upright piece of iron curving forward and attached to its supporting hook and spike. About half way up this back piece projects a rack of iron, having its first tooth rectangular and the remainder triangular, upon which the second shell is suspended by a short perforated back-piece, terminating in a more or less ornamental curve, as shown in the sketch (fig. 5). This upper shell is the reservoir *par excellence* of the cruzie. The wick, any suitable fibrous substance—rush pith being used in

Orkney and Shetland—projects from the spout end of the shell, and when filled with oil the shell hangs upon the rachet horizontally and parallel to the lower or overflow reservoir; as the oil is consumed, the flame gets poor, and then the upper shell, by being brought forward a tooth or two on the rachet, tilts sufficient oil forward to replenish the wick, and so on, until all the oil in the upper shell is consumed. As already described, a considerable overflow occurs, and this falls into the lower shell, to be poured back as required.

Instances occur in which the upper shell has a cover, but these examples are rare, and as for any further decided modifications, I

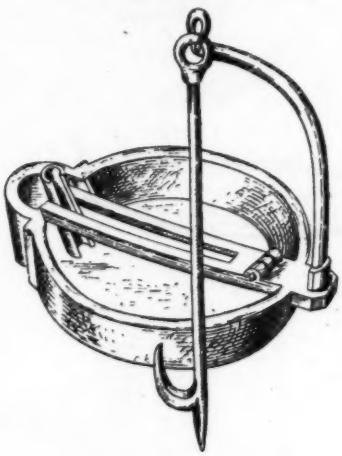

Fig. 8.

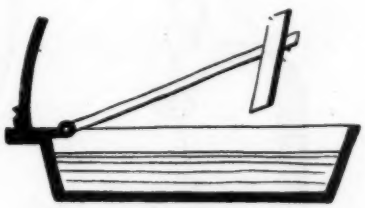

Fig. 8a.

Bronze Lamp with open oil reservoir and hinged wick carrier inside spout; (a) same shown in section (Switzerland).

am not aware of their existence in Great Britain; indeed, so far as this country is concerned, the cruzie is about as consistent in shape as it is possible to imagine, considering that it has survived through so many variations elsewhere. As before stated, the cruzie on the Continent loses much of its characteristic originality, and undergoes many curious and sometimes senseless changes.

Fig. 8 is a bronze lamp from Eastern Switzerland, with one reservoir only, and the wick carried in a hinged gutter—a curious modification of the upper shell.

In fig. 9 we have an iron lamp, bought off a stall in the slums of Amsterdam, but probably of French design, in which the reservoir is enclosed, and the wick carried protudes through

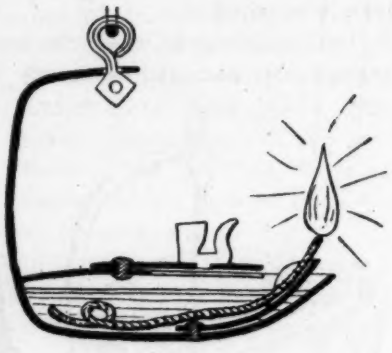

Fig. 9a.

Fig. 9.

Iron Lamp with closed oil reservoir and fixed wick carrier inside open spout; (a) same shown in section.

an opening by which the overflow finds its way back to the reservoir.

Fig. 10 is an elegant design of an old Dutch form. The oil receptacle is quite open, and the wick is supported by a small

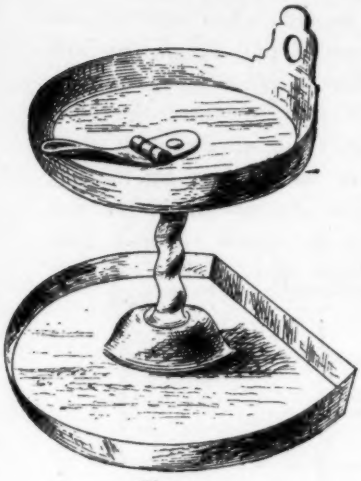

Fig. 10.

Brass Lamp with open oil reservoir and hinged wick carrier inside; (a) same shown in section (Holland).

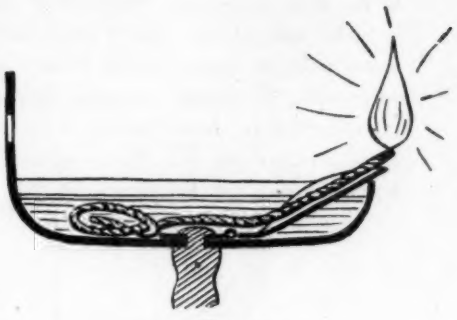

Fig. 10a.

Fig. 11.

Brass Lamp with closed oil reservoir and spout, fitting into a receptacle for catching the superfluous drippings from the wick; (a) same shown in section (Holland).

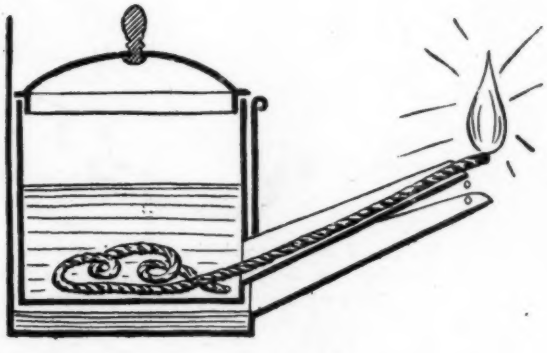

Fig. 11a.

hinged gutter, which can be thrown inwards when not required. In my collection is a white metal lamp of this design, but with a lid, thus marking a direct and distinct advance.

The use of the gutter wick-carrier soon suggested the spout lamp, with its many varied forms: Fig. 11 shows a typical Dutch example. Curiously enough, the spout lamp seems by its very construction to have forced a retrograde movement, for we find here a return to the dual reservoir on the cruzie system. This, however, did not last long, for the single spout, wide enough for

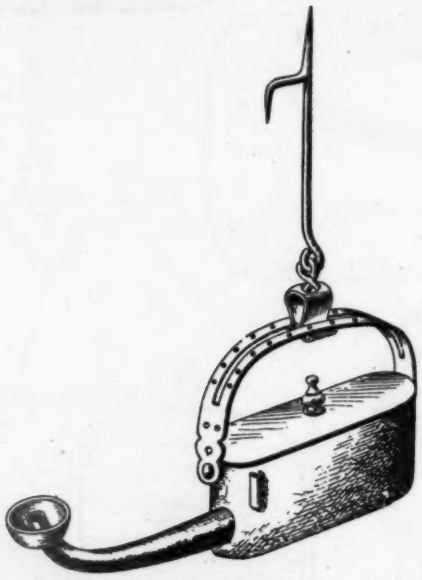

Fig. 12.—Brass Lamp with closed oil reservoir, cup nozzle for catching superfluous drippings from the wick, and slip suspender by which the position of the centre of gravity can be altered so as to throw the oil forward (Holland).

a double circulation, *viz.*, wick up-flow and overflow return, came in, and was applied, of course, to single reservoir.

At this juncture it is interesting to find a distinct advance in the mechanical arrangement for supplying the wick with a proper quantity of oil. Fig. 12 is a small hanging lamp, with a half-hoop suspender. This suspender has a slit along a great portion of its length, allowing free play to a hooked carrier, so that the centre

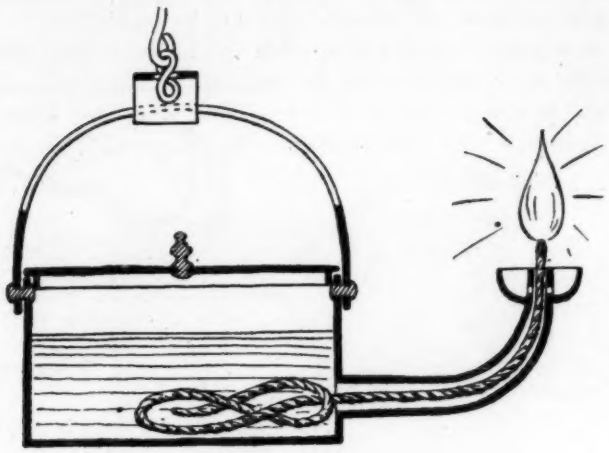

Fig. 12a.—Same shown in section with reservoir full of oil.

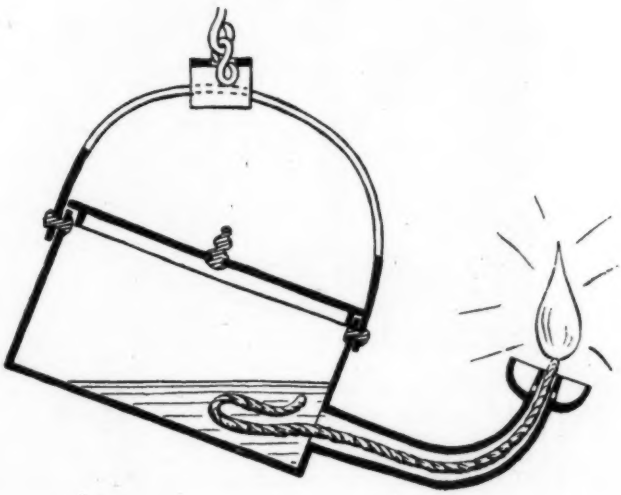

Fig. 12b.—Same shown in section with oil vessel tilted forward to supply wick.

of gravity can readily be altered, thus throwing the oil backwards away from the wick, or forwards on to it, as required.

Fig. 13 represents another lamp from the Duoro Valley, Portugal, in which the body and spout of the apparatus is raised or deflected by means of a rack-work and screw. This is a very interesting and, I believe, a very rare method. The lamp had now arrived

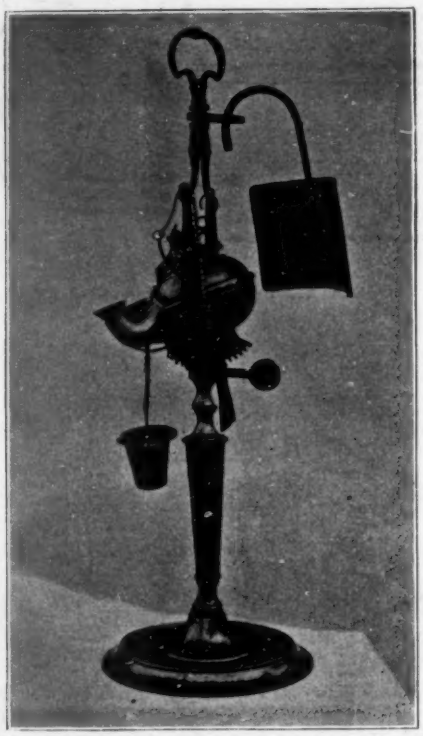

Fig. 13.—Brass Lamp with closed oil reservoir, cup nozzle for drippings, and screw and rack to regulate the flow of the oil to the wick (Portugal).

at such a stage of comparative perfection that the transition of the wick duct from the side of the oil receptacle to a vertical one over the centre of the reservoir was an obviously natural one, but even yet the flow-back of the superfluous oil was provided for, as shown in fig. 14, an example from Switzerland.

Fig. 13a.—Section of same with reservoir full of oil.

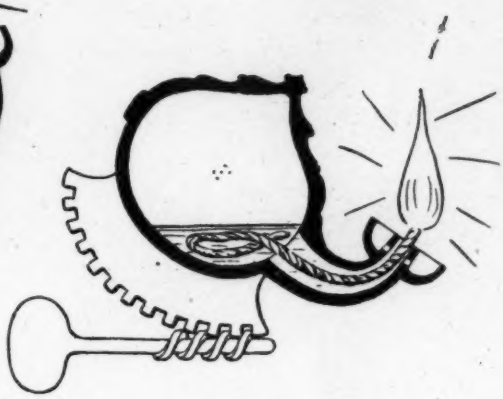

Fig. 13b.—Section of same, with oil vessel tilted forward to supply wick.

Fig. 14.—Glass Lamp with closed reservoir with vertical tin wick tube in centre, having perforations to allow overflow to drip back into reservoir; (a) same shown in section (Switzerland).

With the vertical wick we practically arrive at the limit of our progress so far, for although the glass chimney, the shade, the elaborate ornamentation and decoration of our modern lamps, more or less artistic, but chiefly less—although all these are in a way advances, the main principle of the most elaborate lamp of to-day is identical with that of the little Swiss lamp figured.

EDWARD LOVETT.

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NOTE.—Anyone wishing to pursue the subject of the Scotch cruzie further may with advantage consult Sir Arthur Mitchel's *The Past in the Present;* and papers by Dr. E. B. Tylor in the *Journ. Antrop. Inst.*, vol. 13, p. 348, and by G. Goudie and J. R. Allen in the *Proc. Soc. Ant. Scot.*, vol. 22, pp. 70 and 79.

Fig. 15.—Small Brass Lamp with wick tube and oil catcher combined placed in an open heart-shaped oil vessel (Holland).

Recent Cave-Hunting in Derbyshire.

I.—RAINS CAVE.

DURING the past five years, two caves in this county have been excavated in the interests of archæology—Rains Cave, near Brassington, and Thirst Hole, near Buxton. Although these operations did not contribute any new facts to our knowledge of early man and his ways, they were, nevertheless, by no means without value. Full reports (mostly by the writer) appeared from time to time in the *Journal of the Derbyshire Archæological and Natural History Society*, but this is the first attempt to give a compendious account of the whole work and its results.

RAINS CAVE.

An illustrated account of the discovery of bones and other objects in this cave was contributed by the writer to the *Reliquary* in 1889, but as presumably many of the present readers have not easy access to the magazine in its old form, a brief *resumé* of that paper will be useful. Rains Cave is situated in the upper part of a rugged limestone ridge—Longcliffe—between Matlock and Dove Dale. At the time of the discovery it was a mere creep-hole, some 24 feet long, and entered only with difficulty through an orifice (F, fig. 1), 18 inches high. The floor within sloped irregularly towards the back, where it made a precipitous dive into a smaller chamber (K) scarcely lofty enough to admit the human body. The discovery of bones was made in the first chamber by the two sons of a neighbouring farmer, Mr. Rains, while sheltering from a storm in March, 1888. Observing some bones protruding through the floor, their curiosity was aroused, and they whiled away an hour or two in turning over the loose stones, finding bones and rude potsherds everywhere. Joined

by their cousin, Mr. Cornelius Gregory, they continued the search, with the result, a few weeks afterwards, of a large accumulation of these objects.

This event reaching the ears of the Rev. J. C. Cox, LL.D., at that time editor of the *Reliquary*, that gentleman arranged an interview, in the interests of the Derbyshire Archæological and Natural History Society, with Professor W. Boyd Dawkins, F.R.S., on the spot. Mr. Dawkins instantly pronounced the remains to be of prehistoric age, and strongly urged the systematic excavation of the cave. A small committee was formed, consisting of these gentlemen and several other members of that society, including the writer, to whom was committed the carrying out of the work.

The first operation was a thorough examination of the work already done. The bones were found to be a mixture of human and animal, the latter predominating. The animals represented were the Celtic short-horned ox, horse, horned sheep, long-legged sheep, goat, red deer, roe deer, hog, dog, hare, badger, wild cat, fox, and hedgehog—a group characteristic of the Recent period of the geologist. Many of the long bones had been split for the extraction of the marrow, others were scraped and cut, and a few were charred. The human bones related to, at least, six individuals, but they were too fragmentary to supply any reliable anthropological information, beyond that several of the larger pieces of skull belonged to "long-heads" (*dolichocephali*). The potsherds, with the exception of two coarse, hard, wheel-made specimens, were all of the rude, friable, and hand-made ware commonly found in barrows and other remains of pre-Roman times. Most were quite plain; the rest were decorated with incised grooves, punch-marks, and impressions of twisted rush and finger-nail. One vessel only could be sufficiently reconstructed to give an exact idea of its shape and use. It was a round-bottomed cauldron-like vessel, about 8½ in. in diameter, with a slightly-contracted neck and recurved lip. The edge of the lip was the only part decorated, being rudely "milled." The lower portions externally were discoloured by the action of fire and smoke, indicating that it was used as a stew-pot, for which its rounded shape rendered it well adapted. The only other "finds" worth mentioning were a neatly-turned spindle whorl of fine sand-stone, several chippings of flint and shapeless masses of oxidized

iron, and a curious spade-like implement about 2 ft. long. The last has been identified as a plough spade, an instrument for removing clay from the share, and probably of no great antiquity, as it was found on the surface. Little could be learned as to the exact positions of the various objects, but they were all near the surface, for these diggings were very shallow. The general conclusion was that the objects covered a long period of time, the older ones being pre-Roman.

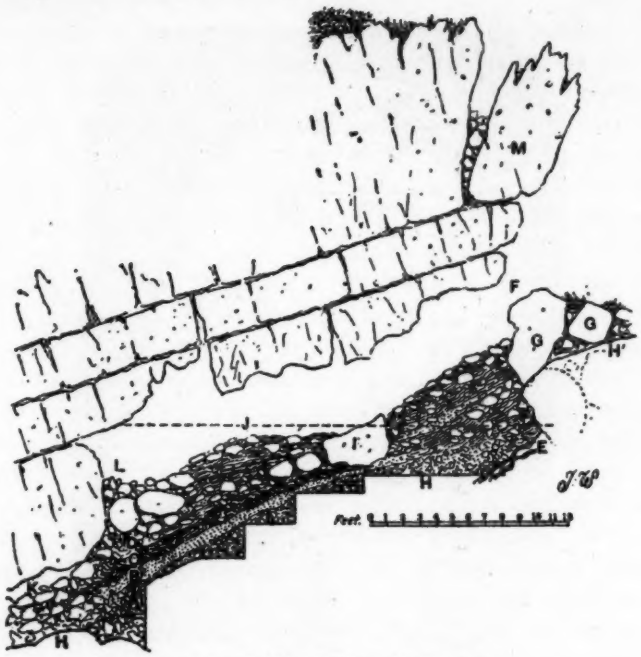

Fig. 1.—Longitudinal Section of Rains Cave.

The actual work of systematic excavation began on December 26th, 1889, and was relinquished at the end of March, 1891. Before describing the results of the work it is necessary (*how* necessary will appear presently) to explain the method of excavation. It was that adopted in the investigation of the famous Kent's Cavern at Torquay, subject to certain necessary modifications. The first step was the preparation of a plan, the level on which it was taken being J in the longitudinal section, fig. 1. The plan was then

divided into a right and a left region by the line A, B, fig. 2, the left region, being very wide towards the back, was again divided by C, D. The whole area was next sub-divided into parallel strips, 1 ft. wide, at right angles to the line A, B—shown by dotted lines on the plan. The positions of these strips were then indicated on the sides of the cave in white paint, each distinguished by a letter, "A" standing for that next the entrance. These marks were for the guidance of the diggers, in order that the cave-earth should

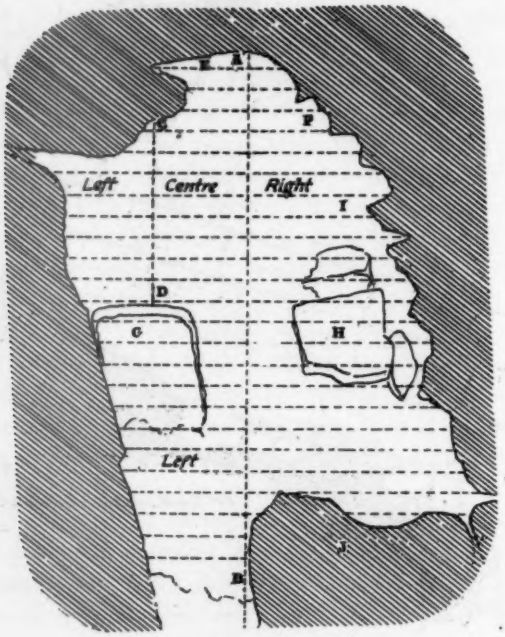

Fig. 2.—Plan of Rains Cave.

be excavated in instalments 1 ft. wide and deep, and in lengths determined by the sides of the cave and the lines A, B, and C, D. Before any systematic digging, however, could be entertained, it was necessary to decide upon a datum plane. To obtain this a tolerably level and otherwise suitable part of the cave was selected, and a trench, corresponding with "J" in the left region, 1 ft. wide and approximately 1 ft. deep, was dug in it. The bottom of this trench served as the datum plane. A foot of the cave-earth adjoining

was next removed down to the same level: this was "I, *left*;" then the next foot down to the same level—"H, *left*;" and so forth, until a large portion of the cave floor was planed down to a common level. So far the strips were necessarily of varying thicknesses, but now it was possible to "peel off" (so to speak) another layer of "feet," all exactly 1 ft. thick. These parallelopipeds were distinguished by the prefix "1," those of the layer below by "2," and so forth, as shown in fig. 3, where the line H, H, represents the lowest limit of the work of excavation.

The bulk of the work was done in the colder months. The brothers Rains and their cousin did most of the digging, but the help of a labourer was often called in, and occasionally an enthusiastic friend volunteered a day's service. When present, the writer directed the work and took notes, duties which fell to the elder Mr. Rains in his absence. Now the *modus operandi*. When a "foot" was being dug, a careful search by candle-light was made in the soil as it was turned up for any objects worth retaining. The *débris* was then removed in a barrow to outside the cave, where it underwent another search. The objects retained were then deposited in a brown paper bag, which was labelled according to the parallelopiped from which they were obtained—"J, *left*," "I, *left*," "I, *right*," etc. Meanwhile, notes were made on the character of the soil and stones, and the exact positions of the more remarkable objects.

Of course all this involved more time and labour than a mere turning-over of the cave-earth, and as the "finds" were of a very meagre and common-place character, the excavation may seem to be a failure to those who judge the worth of such a work merely by the intrinsic value of the objects found. But the paucity in this respect was more than compensated for in the interesting bit of cave history which the investigation yielded, and which was rendered possible only by the rigid carrying out of a system—not merely a system of digging and labelling, but of note-making, for many interesting facts only came to light when the notes were studied after all work had ceased in the cave. If these were not explicit and sufficient, the defect was then too late to be rectified.

A study of fig. 1—a vertical section along the line A, B, of the plan—will prepare the reader for the consideration of the deposits of the floor. It will be observed that the entrance is half

choked by large blocks of stone, G, G, which have fallen from the low cliff above; also that the floor slopes towards the back of the cave. The ground in front of the entrance presented a similar slope but in an opposite direction, the large blocks mentioned above cresting the two slopes. This configuration was brought about by successive falls from above the entrance. Another feature of the section illustrates the process. A large mass (M) of rock above the entrance is shown perilously leaning forwards. Small stones have fallen into the joint behind it, thereby tending to wedge

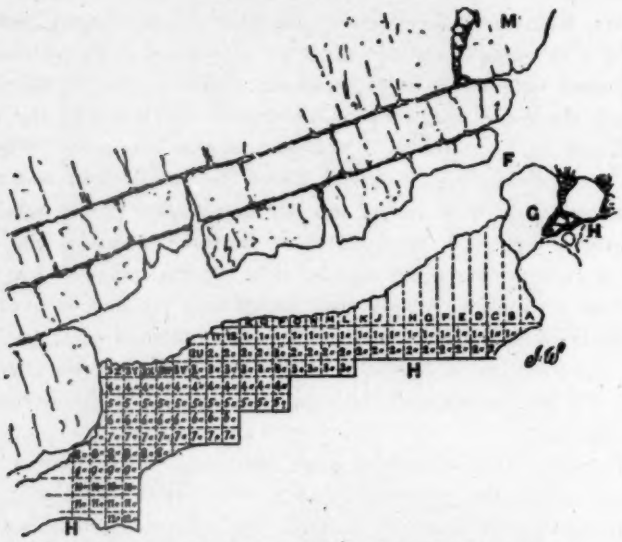

Fig. 3.—Section of Rains Cave showing the method of excavation.

it forwards. There can be no doubt that in the ordinary course of nature the mass must have eventually toppled over, but some mischievous lads brought its destiny to a sudden fulfilment about three years ago. Whenever such falls of rock occurred large quantities of surface soil and stones must have usually followed, some falling down the slope within the cave, and some down that without, the finer materials settling the quickest, the stones rolling longer or shorter distances according to their shape. This accounted for the predominance of soil towards the entrance, and of stones towards the back. The stratification, as might be

expected, followed the slope of the floor. The beds were thickest and most definable in the posterior half of the front chamber, being most pronounced about 5 ft. from the back, while in a forward direction they became thinner and less distinct. The earthy constituents throughout were wholly derived from the parent rock (a dolomitized variety of the limestone), and consisted of stones of all sizes, more or less angular, but never water-rolled, and a variable fawn-coloured loam—these two constituents being sometimes quite separate, but more often intermixed in varying proportions. The larger blocks of stone (as I, fig. 1, and H, G, fig. 2) lay where they fell from the roof. Thin seams of friable stalagmite

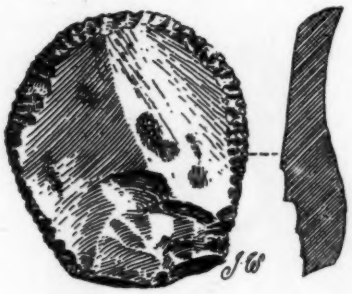

Fig. 4.

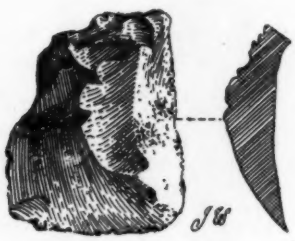

Fig. 5.

Flint Implements from Rains Cave.

were repeatedly cut through towards the back of the cave, and stones and other objects were found with their upper surfaces covered with films of the same material, showing that their respective levels represented old floor-surfaces upon which they lay exposed to the limy drip. Near the entrance several seams of crystalline stalagmite, from 1 to 2 in. thick, were exposed at a depth of about 6 ft. (E, fig. 1).

The upper portions of the cave-earth varied from a mixture of loam and stones near the entrance to a loose or slightly-cemented shingle at the back. Very few bones were found in it in the anterior half of the cave, but they increased in number towards the opposite end, consisting there of both animal and human bones. It was hereabouts that the Rains obtained most of their "finds." On the right side (F, I, fig. 2) was a patchy layer of charcoal, sometimes reaching to 2 in. in thickness, intermixed with soft

stalagmite, and below it were several thin seams of the same substance. These seams ended abruptly towards the central region, but the numerous fragments of stalagmite intermixed with the cave-earth in that region made it clear that they once extended further in that direction, and that the floor there had afterwards been subjected to a considerable amount of disturbance. Associated with the charcoal were many scraped and hacked animals' bones, and about eighteen pieces of flint, of which only seven showed signs of secondary working. The best of these was a neat horse-shoe-shaped scraper (fig. 4), a smaller scraper (fig. 5), a portion of another, and a ridge-flake with slightly serrated edges (fig. 6). The unworked pieces were mere shapeless splinters.

Fig. 6.

Fig. 7.

Flint Implements from Rains Cave.

The next bed (C, fig. 1), had a maximum thickness of 6 in., and was dark, mottled, and thickly charged with animals' bones and charcoal. It was obviously a *refuse* layer. Sometimes it was little else than a matted mass of bones, many of them scraped and broken, and indicating a good deal of feeding, in which beef and mutton conspicuously figured. Nearly all the animals in the list given above were represented in the bones of this layer, and in addition there were the urus and the wolf. Usually this bed was sharply defined, but in the central region it was frequently confused with that above, apparently by the same agency which

broke up the stalagmite seams above. Fragments of pottery of the rude hand-made type, already described, abounded, many of them being highly decorated in the same manner. Of this ware was a curious cylinder, 2¼ by 3½ in., perforated lengthways by a circular hole, the use of which has not been made out. About a dozen pieces of flint were picked up in or near this layer. One of these was a javelin-head-like implement (fig. 7). Another was apparently an unfinished tool, broken in the process of manufacture. A core seemed to have been used as a hammer. A quartzite boulder, also used as a hammer, was bruised in such a manner as to leave little room for doubt that it was used in flint-flaking; and this, taken into consideration with the unfinished implement and the chippings, tells of the visit of a flint-implement maker. Among the various minor odds-and-ends were some swan mussel (*Anodonta cygnea*) shells, smoothed pieces of fine sandstone, quartzite boulders and pebbles, a well-rounded pebble of white quartz, and a shaly pebble sharpened along one edge. But a more noteworthy feature was the presence of human bones, and this was supposed at first sight to indicate cannibalism. But instead of occurring throughout the layer and being evenly distributed among the animals' bones, as one would have expected had they been the rejectments of human food, they were confined to several spots only, and in no instance was a scraped or cut specimen found. Moreover, bones which from their size and other characters might be presumed to belong to the same individual, were often found together; and, in one instance, a portion of a skeleton was traced, the bones being in their anatomical order. There was therefore no room for doubt that the cave had been used as a cemetery at some period subsequent to the deposition of the refuse layer, and this conclusion was fully corroborated by later investigation.

Below this layer were two well-defined beds, an upper (B, fig. 1), consisting almost entirely of loam, and having a maximum thickness of 7 in., and a lower (A), an unconsolidated breccia, the bottom of which was not reached, although it was excavated to the depth of 5 ft. at the back of the cave. In neither of these were observed any bones or indications of man's contemporary presence. The stones of the lower bed had their interstices frequently filled with loam; when not so, they were usually

cemented by films of stalagmite. The impression these beds gave rise to was that the lower was introduced into the cave as a loose shingle, and that the loam was washed in by rain water, and in flowing over the shingle sank here and there into its interstices. In the course of the excavation at the back, a small chamber (K) was entered. It was almost quite choked up with stones, which, in common with numerous bones (human and animal), had rolled down from the front chamber. These stones were free from loam, but there were many patches of a fine earthy-looking powder, which consisted almost entirely of the bones of small animals, as rat, frog or toad, birds, and bats.

The refuse layer, of course, tells its own tale. We can picture the primitive folk eating their food in the middle of the cave, where the floor was less steep, and throwing the waste down the steeper slope behind. The charcoal and burnt bones point to fires and cooking. An accumulation of the dimensions of this layer could not have resulted from a few hunting visits, or an occasional funeral feast; the cave must have been very much resorted to for a considerable time, if not regularly inhabited. The charcoal patches of a higher level, with their associated bones and flint objects, point to feedings and fires of a more transitory character at a later period. That the use of the cave as a cemetery was *subsequent* to the former period of habitation is beyond question. That *some* of the interments should be disturbed is a common enough feature in all prehistoric burial places where successive burials have taken place. There is little doubt that several of the interments were accompanied with "food vases," for among the decorated potsherds pieces of, at least, two vessels of that form could be distinguished, and as they exactly agreed in character with the sepulchral ware of the pre-Roman British grave-mounds, they furnished a clue to the age of these interments.

That portions of the disturbed interments should have been found widely separated, and at different levels in the cave, is just what might have been expected; but when the attempt was afterwards made to reconstruct the skulls and vessels (the fragments all duly labelled according to the positions they occupied in the cave-earth) an unlooked-for result was obtained. It was discovered that stray pieces of skulls and vessels which belonged to disturbed interments on or near the refuse layer, lay *below* and *above* the

stalagmites and charcoal patches of the right side, and occurred also at such high levels as to have been removed by the Rainses in their superficial diggings. It was plain, then, that the interments represented by these fragments were first disturbed *before* the stalagmite and charcoal were deposited; that after an interval sufficiently long to allow of the formation of several seams of stalagmite and the accumulation of much cave-earth, more interments were introduced, the graves being dug through these seams, and fragments of the earlier interments being re-deposited above their undisturbed portions; and that this process was repeated at least once more, bringing up some of the latter fragments to still higher levels. The formation of stalagmite is slow, so that several seams (although but thin), with their intervening accumulations of soil and stones, must have taken a considerable time—centuries, at least—to form. This indicates a long interval in which the cave was not used as a burial place. But the same process which brought up to higher levels some objects was competent to bring others down to lower levels. It was observed above that there were implements and fragments of flint associated with the charcoal patches, also with the refuse layer and the soil immediately above it. A comparison of the two series left little room for doubt that many of the latter, including the unfinished implement, really belonged to the former, and therefore had been re-deposited at a lower level through the digging of graves.

A consideration of the foregoing makes it possible to give the successive uses to which the cave has been put by man:—

(1) It was for a considerable time used as a dwelling-place.

(2) It was then used as a sepulchre, the bodies being laid in shallow graves, which reached the refuse accumulated during the period of habitation.

(3) Then followed a long interval, during which it was again, but only for a short time, used as a habitation, one of the tenants being a "flint-knapper."

(4) The cave again a sepulchre, some of the graves this time being dug sufficiently deep as to cut through the charcoal and stalagmite seams, and even to reach the refuse layer, and thus to jumble together objects belonging to all the periods represented.

(5) Another long interval during which the floor underwent no

further disturbance, and the cave was not put to any long use by man. This terminated with the recent excavation.

As stated above, the earlier interments were (upon the evidence of the associated pottery) contemporary with the pre-Roman round barrows of the district, which are invariably attributed by antiquaries to the Bronze Age. The refuse layer was, of course, older, and may—but there was no proof for this—have reached back to the Neolithic Age. Nothing that could be identified as belonging to Pleistocene times was found. But suppose that the refuse layer had turned out to be of Pleistocene age, and that the excavation had not been conducted on systematic lines, how easy and natural it would have been to have concluded that the human remains associated with it were also Pleistocene!

JOHN WARD, F.S.A.

(*To be continued.*)

A Primitive Musical Instrument.

IT is always of interest to find objects which, even if they do not with certainty illustrate, at any rate plausibly suggest, the earliest forms or prototypes of the various appliances with whose highest developments we are familiar. The absence or meagreness of historical record makes it necessary for us to depend largely upon such survivals from primitive times as have, from various causes, continued more or less unchanged in form, side by side with the often highly specialised forms which are actually descended from them, having been evolved, one may say, from these primitive types.

Amongst musical instruments, we may still see the archer's bow temporarily converted into a musical instrument, as amongst the Damaras of South-West Africa; and we have thus an exemplification with living examples of the legendary origin ascribed to certain stringed instruments of music by the ancient Greeks, Hindus, and Japanese. Numerous other surviving prototypes, so to speak, might be mentioned.

Quite recently I had brought to me some interesting, if rude, musical instruments, which in all probability may be taken as illustrating a very early stage in the developmental history of the oboe series.

In accordance with an old charter, certain villages in Oxfordshire were allowed on Whit-Monday to kill a stag in the forest preserves. The villages chiefly concerned, which enjoyed this prerogative, were, I understand, Hailey, Crawley, and Witney, but most of the neighbouring villages joined in the hunt, which was the occasion of considerable revelry. If any of the villages named failed to kill a buck, the forester was authorised to shoot one, and to hand it over for the feast. For some while before the day, the younger members of the villages were busy preparing rude instruments of music (or rather of noise), with which to call the villagers to the hunt, and to rouse them from the somnolence of Whitsun night, into the necessary activity of Whit-Monday. At the very first streak of daylight on Monday morning they ran round the villages waking people up with the sound of their "whit-horns," as they were called. The structure of these is interesting and peculiar.

When the bark of the willow was in a suitable condition, long strips, from two to three inches wide, were peeled off, after having been soaked and beaten to loosen the bark. The strip was then neatly twisted up spirally into a tapering funnel, and the overlapping edges were strongly pinned together with hawthorn or blackthorn spines. The latter became very firmly fixed in the green willow-bark which closed tightly round them, and the whole structure was strong and compact. From smaller branches of the willow (about half-inch or rather less in diameter),

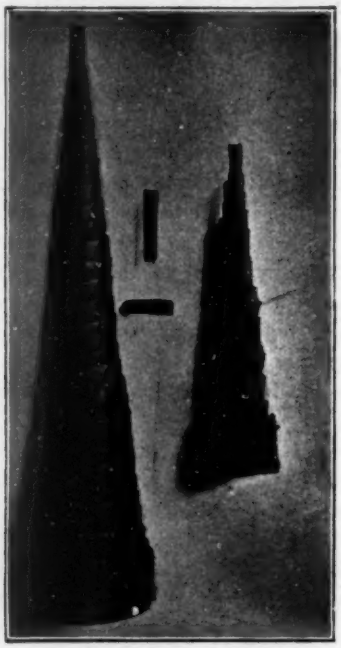

Fig. 1.—Oxfordshire Whit-horns.

small cylinders of bark, about two and a half inches long, were drawn off entire, having also been loosened by beating. These were slightly trimmed at one end to thin down the edges, and they were then fixed into the smaller end of each instrument, the apex of the funnel, to serve as mouthpiece or sounding reed. The instrument was then complete. The thinned edges of the mouthpiece were pinched together, and in this way an oboe reed of the simplest possible kind was made, and the whole instrument became a rough oboe without stops. In blowing the instrument, the reed was taken into the mouth, and, as the wind was driven forcibly

through it, the thin vibrating edges alternately, and with great rapidity, closed with the pressure, and opened with their own elasticity, thus acting as a valve of precisely the same character as the modern oboe reed, and throwing the column of air inside the funnel into vibration, the note produced varying with the size of the instrument.

It seems more than probable that in this very simple type of oboe reed we may have a surviving example of the ancestral form of the later carefully built up forms, and the cylinders of bark are practically ready-made oboe reeds.

Many will doubtless remember, as I do, having in their boyhood made from green corn-stalks two kinds of simple squeaking pipes. One kind had a vibrating tongue slit at one end (which was closed by a node), the simplest kind of clarinet reed—one stage, in fact, more primitive than the sounding reeds of the *arghool* and *zummárah* of the Arabs. The other kind was yet simpler, and the section of corn-stalk (the internode only), which was open at both ends, was merely pinched together at one end, so as to lengthen and narrow the orifice, the simplest form of oboe reed. Such rude instruments perhaps were the

> ". . pipes made of grenè corne
> As have these little Herdegroomes
> That kepin beastes in the broomes,"

mentioned in Chaucer's *House of Fame, III.*, lines 133-136. Virgil, Spenser, and Shakespeare also mention pipes of oaten straws, and I have cited quotations from these authors in a former paper.[1]

In the "Whit-horn" the reed is removable, and in this respect therefore the position of this instrument in the oboe series corresponds with that of the Arab *arghool* and *zummárah* in the clarinet series, these being virtually in stage II. of the evolution series. E. Naumann (*Hist. of Music*) tells us that the *schallmey*, a kind of oboe, is derived from the *calamus* (Roman reed pipe). "It is found," he says, "in its most primitive form amongst the peasants of the lower Rhine, where it is known as the May flute. It is made by youths in the spring, of green reeds or the soft bark of trees, and possesses a soft dreamy tone, not unlike the schallmey register of the clarinet." I have not seen one of these "May flutes," but from the description they would seem to correspond nearly with the "Whit-horns" of Oxfordshire, and possibly they may be identical with them.

Of the two specimens of "Whit-horn" figured, one is a fresh one still quite green. The other, originally a much smaller one, is shrunken

[1] "The old British Pibcorn and its Affinities," *Journ. Anthrop. Inst.*, vol. xx., pp. 143, 144.

and dry. The larger is about eighteen inches long (exclusive of the sounding reed), and four inches across the bell-mouth. Many used to be made of still larger size. Two spare reeds are shown with the specimens. The specimens were made by a very old man of the district, who well remembered their use and mode of manufacture, though it is a good while since any were made for actual use. According to him the Whit-Monday hunt was discontinued about forty years ago, when the forest was enclosed, and although the horns continued to be made for some time longer, it was not for the purpose of calling folks to the hunt. I am indebted to Mr. T. J. Carter, of Oxford, not only for procuring me the specimens, but also for the information concerning their use.

Oboe reeds made from natural cylinders, that is to say, made from a single piece of some vegetable stem which furnishes a jointless cylinder, instead of being built up of two or more pieces joined together, are not unknown in instruments of a higher order. The accompanying figure shows a neatly-made oboe reed, made from a short length cut from the internode of a thin-walled reed or grass-stem, about $\frac{5}{8}$ in. long. This, while still green, has been neatly whipped round with fine wire, to constrict it below, and in order to prevent its splitting when fitted on to the reed-holder; the vibrating edges above have been pinched together. It belongs to a small Chinese oboe, *so-na*, of the kind figured by Hipkins & Gibb in *Musical Instruments* (pl. 47).

Fig. 2.
Oboe Reed.

No doubt the tendency to split at the sides, which is inevitable in reeds made in this way from one piece, together with the fact that one so split could still as a rule be sounded with good effect, led to the making of reeds in two parts bound together with a whipping of fine twine or wire, the edges of the pieces fitting closely together along the sides of the reed. Many very primitive types of built up reeds of this kind may be seen in India, Burma, and elsewhere, and many stages can be found between such forms and the highest types of oboe "reeds" used in the modern European orchestra. The whole series of developmental stages can, in fact, probably be illustrated by means of modern survivals in various countries.

HENRY BALFOUR,
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Notes on Archæology and Kindred Subjects.

DISCOVERY OF A PREHISTORIC COOKING POT *IN SITU* ON DARTMOOR.

THE Dartmoor Exploration Committee has been engaged for the past three years in the investigation of some of the groups of hut circles on Dartmoor, including the important settlements of Broadun and Grimspound, near Post Bridge. The huts in both these yielded "cooking stones" and flint implements, and it was observed that holes sunk in the floors, formed of the sub-soil or "calm," usually accompanied the hearths, and were apparently used for cooking purposes, as they often contained the "cooking stones," together with ashes and fragments of wood charcoal. No pottery was found in any of the huts.

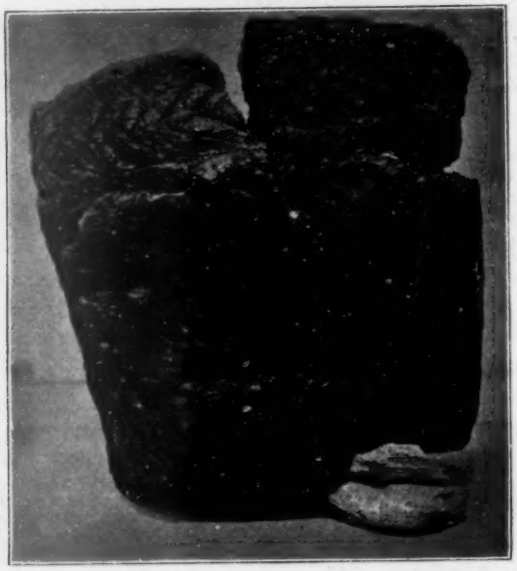
Other groups on Shapley Common, Whiten Ridge, and Legis Tor yielded fragments of rude hand-made pottery, characteristic of the Neolithic or Early Bronze Age, in or about the "cooking holes" and fire places. On the 16th of May last the Committee, whilst exploring the hut circles on Raddick Hill, near Princetown, and at Legis Tor in the Plym Valley, found two cooking pots standing in their "cooking holes." The Legis Tor pot, unfortunately, was so fragile and rotten that it fell to pieces on removal, but the former was recovered exactly as it stood in its hole, and forms the subject of the accompanying illustration. In both cases a stone of the hut circle had fallen inwards, thus covering the pot and protecting it.

The example found at Legis Tor still contained two of its "cooking stones," but the Raddick Hill pot has not been cleared out, for, being cracked in several places, it was feared that the removal of the compact soil within it would result in its breaking up. This domestic pottery is very similar to that used for sepulchral purposes, and if found under different circumstances might have been described as such. The Raddick Hill pot is nearly eleven inches in height, with an internal diameter at the mouth of nine and a half inches. There are the remains of a rim going the whole round of the vessel, but much of this has dropped

off. From this upwards the vessel is ornamented with a chevron pattern. The bottom of the pot is gone.

The pottery is coarse, badly burnt, and hand-made, and varies from a half to three-quarters of an inch in thickness. The interior is much blackened by cooking operations.

It appears from the investigations thus far conducted that the earlier huts in which no pottery is found possessed "cooking holes" only.



Cooking Pot found in a hut circle on Raddick Hill, near Princetown, Dartmoor.
From a photograph by R. Burnard.

In these, baking operations must have been performed by means of hot stones, and boiling by the same method of applying heat, with the "cooking hole," made water-tight by means of a skin, after the manner of modern savages.

The placing of vessels in a hole, and warming the contents by hot stones within, is a distinct advance, but so far no huts have been explored which have yielded any vessels, or fragments of vessels, which would stand warming over a fire. Not a trace of metal has been found in any of them, and the persistent absence of bronze is suggestive that these dwellings were inhabited by a people living in a Neolithic condition.

ROBERT BURNARD.

WOODEN HAND MANGLES.

Fig. 1.—Dutch Hand Mangle, 2 ft. 9½ ins. long, by 5 to 6 ins. wide, by ½ in. thick.

THE use of the ancient wooden hand mangle, for flattening linen after it has been washed, has now been almost entirely superseded by more modern laundry appliances, which, although supposed to be improvements from a purely mechanical point of view, are far more destructive of anything in the shape of a button. The earliest kind of linen smoother known in this country was of black glass, in the form of an inverted mushroom. Examples have been found in graves of the Viking period.[1]

The essential working parts of the wooden hand mangle are a flat board (from 2 ft. 6 ins. to 2 ft. 9 ins. long, by 4 to 6 ins. wide, by about ½ in. thick) and a roller (from 1 ft. 6 ins. to 2 ft. long, by about 2 ins. diameter). The under surface of the board and the round part of the roller must necessarily be perfectly smooth, so that whenever there is any ornament it is concentrated upon the upper surface of the board and the two flat ends of the roller. The method of using the mangle is to damp the linen in the usual way, place it round the roller on a flat table, and then work the roller backwards and forwards over it by means of the board, a downwards pressure being exerted with the flat of the hand at the same time.

The rollers are nearly always of the same pattern; but the shape of the board varies in different countries. The simplest as regards form are those used in North Holland, although they are

[1] Dr. J. Anderson's *Scotland in Pagan Times—Iron Age*, p. 37, and *Catalogue of National Museum, Edinburgh*, p. 326.

often the most elaborately ornamented. They consist of a flat board without any handle. The example illustrated on fig. 1 was purchased

Fig. 2.—Norwegian Hand Mangle in the South Kensington Museum (No. 572—1891), 2 ft. 3 ins. long by 4¼ ins wide.
Drawn for the "Reliquary" by C. J. Praetorius.

Fig. 3.—Norwegian Hand Mangle in the South Kensington Museum (No. 571—1891), 2 ft. 8¾ ins. long by 3¾ ins. wide.
Drawn for the "Reliquary" by C. J. Praetorius.

from a London dealer, and is now in the collection of the editor. The under, or working surface, is quite smooth; but the upper surface is

covered with very elaborate incised geometrical designs, alternating with lines of inscription. The whole is picked out in bright colours. This quaint style of carving and painted decoration is characteristic of Hindeloopen in Friesland. The explanation of the inscriptions and the lavish display of carving on so homely an article as a mangle, is that these domestic appliances were specially made for wedding presents, and were highly prized as one of the most essential parts of the housekeeping outfit of the bride. The value of the gift was no doubt greatly enhanced when it was carved by the young man himself who was engaged to be married for his sweetheart, and the amount of loving labour bestowed upon its decoration would be a fitting measure of the strength of his affection.

Fig. 4.—Wooden Hand Mangle from Whitby, Yorkshire.

The Norwegian mangle shown on fig. 2 is turned up like the toe of a Turkish slipper at the front end, and has a handle in the form of a horse at the back end. The mangle—also from Norway—shown on fig. 3 has an additional knob-shaped handle near the front end, and the handle at the back is in the form of a lion instead of a horse. Mangles of this type are found in North Germany. The zoömorphic handles are probably survivals from a very remote period.

Mr. Edward Lovett, of Croydon, has in his collection several old English hand mangles obtained in the neighbourhood of Whitby, in Yorkshire, the plainest of which is shown on fig. 4. They are shaped like a cricket bat, having a round handle projecting from the back end instead of having a loop-handle on the upper surface as in the Norse and German specimens. They are also thicker, more clumsy in appearance, and less highly ornamented

than those from the continent. In some cases they are quite plain ; and even where carving does appear, it is of a very debased kind, being in this respect, as Mr. Lovett observes, "Like most English things—useful, but not ornamental." The Yorkshire hand mangles vary from 2 ft. to 2 ft. 9 ins. in length, by from 5 to 6 ins. wide, by from $1\frac{1}{2}$ to $1\frac{3}{4}$ ins. thick. Some have parallel sides and rounded ends, whilst others have square ends and are wider in front than at the back. The ornamental carving, consisting of foliage, heraldic devices, initials, heads of men and beasts, is rudely incised.

Fig. 5.—Wooden Hand Mangle with Lion Handle, from Whitby.

One of the mangles (fig. 5) has a lion-handle in the middle of the wide part. Mr. Lovett happened to be showing this specimen to a Scotch friend and asked him whether he knew what it was. His friend replied, "Oh, yes" (or possibly "'oo, aye"), "that's a mangle. When we were boys, in the north of Scotland, we used to knock off the lions in order to turn them into cricket bats." The lion on the Yorkshire mangle is quite solid, and grooved at the side like a clothes brush, so to as give the hand a firmer grip ; not pierced through between the fore and hind legs as in the Norse mangles.

In Corea, a pair of heavy, round wooden clubs, 1 ft. 4 ins. long and 1 in. diameter, are used for mangling clothes (see *Report of National Museum, U.S.*, for 1891, pl. 17).

SOME INTERESTING ETRUSCAN STATUES.

THE bronze rooms of the Florentine Etruscan Museum have lately been enriched by the purchase of some most beautiful fragments of Etruscan statues, which, if they were only entire, would throw the Orator and Minerva of the same museum into the shade.

The fragments belong to a stupendous Etrusco-Greek group of Diana in a Biga, and parts of two different statues of Apollo. One of the latter seems to be of the same style and epoch as the Diana, *i.e.*, from 450 to 350 B.C. The other was very much earlier, and cannot be referred to less than six centuries before Christ.

They were all found at Chianciano,[1] "near a temple at what was till past the Middle Ages known as the 'Balneum de Sellena.'" From this we may gather that the hot springs of Chianciano were known to the Etruscans, and that Apollo, the Sun-God, and his sister Diana, or

Fig. 1.—Bronze Pole and Crossbar of Diana's Biga in the Florentine Etruscan Museum.

Selene (the Moon), were jointly worshipped there; we also gather that the Apollo was oracular, if not miraculous. The reasons for this I will explain.

When the bronzes were first found, it was believed that all the parts belonged to one statue of Apollo, but as some parts were of the same style and epoch as the Diana and of the same bronze, while others were of a different metal, and very much earlier and more archaic style of art, it may be reasonably supposed that in the third century B.C. the Etruscans built a new temple for their ancient oracle, and adorned the pediment with life-sized bronze statues of Apollo (Helios) and Diana (Selene).

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[1] A place in Tuscany noted for its hot baths. The temple was excavated in 1868. Some fragments purchased by Sig. Paolozzi, with the bit of the "Torso."

Of Diana and her Biga, there remains her crescent; her beautifully modelled arm in attitude of holding the reins, with a flying bit of drapery curving about it; some of the feet and ears of the horses, enough to show a master hand in animal forms; and the entire pole and cross bar of the Biga, of which we give a sketch (fig. 1). The latter is extremely fine. At one end of the pole is the head of a griffin (fig. 2) and at the other a frog, a symbol allusive to Diana Selene.

The bronze has a fine patina, and not a line of its clear cut ornamentation is wanting. The artist has evidently modelled his Biga pole from an actual wooden one, and represented faithfully every twisted or carved thong of leather used in its construction.

Of the contemporary and companion statue of Apollo, there remains a foot of fine proportions in classic sandals, a powerful hand, a bit of drapery, and a part of the torso, showing good modelling about the chest.

Some of these were bought by Sig. Paolozzi when they were excavated in 1868, and Sig. Gamurrini wrote a paper on them in the *Annali*

Fig. 2.—Bronze Griffin on front of crossbar at end of pole of Diana's Biga.

Fig. 3.—Foot of one of the horses of Diana's Biga.

dell' Istituto Archæologico Germanico, 1882, p. 140. The torso was purchased by Marchese Strozzi. Thus for many years they were divided, but now, by the efforts of Cav. Milani, director of the Etruscan Museum, we see them once more united. And with them is what is left of the older and more archaic statue of Apollo, which probably stood at the altar inside the temple.

This oracle did not, like the Apollo of Kanachos, now in the British Museum, tremble in its limbs, but its eyes flashed like the sun, and it must have been a worthy rival of its contemporary, the Minerva of Arretium (Areggo), who spoke words of wisdom for the edification of its worshippers. These miracles of an old world now lie exposed to us in all their simplicity. The Minerva, with the speaking-tube let into the back of her head, stands now in the same room which contains the tale-telling head of hair of the eye-flashing Apollo. The peruke, which decidedly cannot belong to the same statue as the other fragments, is of a very conventional and fettered style of art.

The hair flows in even waves down from the centre of the head. It is neatly worked out with the graver. This bronze wig shows signs of ancient solder on the forehead, as though it had been attached to a *vultus* or face of another material, probably gold. The significant part is the back of the head, where there is a kind of window (fifteen centimetres by ten) large enough to pass a hand through. The doors which close this orifice are so cunningly worked, and the waves of hair so carefully carried across them, that when closed the superficial observer would never perceive an opening. A hook, which was found in the top of the interior of the head, suggests that the priests were in the habit of passing a tiny lamp into the orifice, and suspending it there, so that the jewelled eyes of the statue seemed to gleam and flash.

Sig. Milani wrote an account of this eloquent fragment of ancient art in the *Notizie degli Scavi di Antichita* (heading Chianciano) for 1887, long before he hoped to gain possession of it for the Florentine Museum, with all its companion relics.

LEADER SCOTT.

DISCOVERY OF A BONE CAVE AT CUCIGLIANA, NEAR CASCINA, ITALY.

The Marchese Gino Incontri, of Florence, has lately made some important excavations of fossil remains in a grotto at Cucigliana, near Cascina. He has brought to light fossilized bones and skeletons of hyenas, lynxes, lions, bears, wolves, wild boars, horses, deer, goats, and oxen, besides many birds and reptiles. The Marchese has generously presented all these interesting fossil remains to the Paleontological Museum at Florence.

LEADER SCOTT.

WOODEN SPOON RACKS.

THE interiors of the old farmhouses in this country, which are always so fascinating to the artist in search of the picturesque, owe much of their charm to the unpretending simplicity of most of the domestic appliances, utensils, and furniture. Even if these are not home-made, it has been unnecessary to go further than the carpenter's shop or the smithy in the neighbouring village to procure them; consequently, they nearly always exhibit some local characteristic of design, form, or ornament which gives them the distinction of individuality that is never to be found in any one of the thousands of objects of the same pattern turned out daily from a large manufactory. The extension of railways to the remotest parts of

Great Britain is rapidly reducing everything to one dead level of soulless uniformity, and the products of home or village industry are becoming so rare that collectors are beginning to pay high prices for objects of domestic use, which, although common enough ten or twenty years ago, are already looked upon as archaic, and will assuredly before long be quite extinct.

Amongst the domestic appliances which have become obsolete in

Fig. 1.—Wooden Spoon Rack from St. David's, South Wales.

most places in this country are the wooden spoons, bowls, and trenchers used at meals. In Pembrokeshire, however, they still survive, and may be purchased any market day in the county town of Haverfordwest. Formerly great quantities of wooden articles of this kind were made, but now there is only a sufficient demand to keep one or two persons employed, who live near Maenclochog amongst the Preceli Mountains, and send their wares as required to a cooper in Haverfordwest.

When not in use the bowls and platters are piled neatly or otherwise carefully arranged on shelves against the walls of the kitchens of the farm-houses, but the spoons are kept in a rack specially designed for the purpose. We give an illustration of one of these primitive appliances procured from an old cottage near St. David's (now in the Cardiff Museum).

It consists of a rectangular piece of yellow pine 1 ft. 4 ins. long by 6 ins. wide by 1 in. thick, pierced with two rows of holes (six on one side and seven on the other), each $\frac{3}{4}$ in. in diameter. The rack is provided with

Fig. 2.—Old Wicker Spoon Creel from Aboyne, Aberdeenshire. Scale, $\frac{1}{3}$ actual size.

a hazel wand, bent into the form of a semi-circular arch, 8 ins. high, for suspension to a large wooden peg which projects nine or ten inches from the wall. The hazel handle is cut flat with a knife on the inner side of the arch, and is fixed to the body of the rack by wedging like the handle of a hammer.

It has been repeatedly asserted in books on anthropology and archæology that men under similar circumstances when necessity stimulates their inventive faculties always act in a similar manner. This is only true when the problem to be solved has but one solution, which hardly ever occurs. When it has more, two men hardly ever hit upon the same idea, unless it happens to be an extremely obvious one.

As an instance of how the spoon-rack problem has been solved elsewhere in different ways, we give the following illustrations:—

Fig. 2 shows a spoon creel from Aboyne, Aberdeenshire, now in the Museum of National Antiquities in Edinburgh ("Catalogue," p. 326—ME. 143). It is a prettily shaped basket with an upright wooden ridge in front, and a flat board at the back pierced with two holes for hanging against the wall. The photograph from which the reproduction has been made was taken by kind permission of Dr. Joseph Anderson.

The Japanese manufacture their spoon racks out of pieces of bamboo by cutting large notches just above each of the joints (see fig. 3 reproduced from E. S. Morse's *Japanese Homes and their Surroundings*, p. 172). Bamboo flower vases are made in Japan in the same fashion.

Fig. 3.—Japanese Spoon Rack of Bamboo.

Fig. 4.—Aino Wooden Spoon and Hook from Chitose, Yezo.

Lastly, the Ainos of Yezo utilise the natural forked branches of a tree to form a hook on which they hang up their spoons (see fig. 4). The specimen illustrated is in the British Museum. It was presented by J. Anderson, Esq., M.D., and was procured at Chitose.

EASTERTON OF ROSEISLE.

In the April number of the *Reliquary* there appeared an interesting letter from Canon Greenwell on the finds at Easterton of Roseisle, with regard to which I trust I may be allowed to make one or two remarks.

As applied to England, the Canon's conclusions are those of a great authority and master, but I think they will not apply with equal force to Scotland, especially to the north. The theory that cists belong to the Bronze Age holds true in England, but in Scotland they are, in my opinion, mostly, or very largely, of the Stone Age—that is, the age when the natives used stone weapons exclusively. I think no one who has studied the graves at Keiss, in Caithness, will hold that they belong to the Bronze Age. In every cist I know of personally in the north of Scotland flint arrow-heads, bracers, or stone axes have been found, but I never knew from personal experience of a bronze weapon being found with an urn in a grave.

The question is, whether Scotland ever had a real Bronze Age extending over anything like the same length of time as in the southern parts of Britain. I believe from experience, for I am no theorist, that the Stone Age came down to a much later period in the far north than is generally supposed; in fact, that it continued far into the Iron Age, and even to the Christian era. The whole of the bronze weapons in the National Museum in Edinburgh would not equip fifty men, and the whole north-east of Scotland, from the Spey to Caithness, has produced so few that they can almost be counted on one's fingers. Of course I do not allude to the Western Islands, where many bronze weapons have been got. The bronze articles found at Culbin are very numerous, but they are not earlier than the Roman period, and many, such as the rivets, are found in Roman camps. The bronze leaf-shaped swords of Scotland are of the Etruscan pattern, and are probably of Italian origin, and have been imported, whilst the spear heads and javelins are of either Greek or Roman patterns.

The Spey valley is so full of fine iron ore that bronze would be a superfluity in Morayshire; and at Easterton of Roseisle I found several lumps of iron ore of fine quality, along with worked flints, these having been used for strike-lights apparently.

I am writing this paper far from the aid of authorities and books, and I am aware that these views are an innovation on accepted theories, but they are founded on facts. That a Bronze Age ever existed in the north of Scotland as an age when bronze was solely used, I hold there is no evidence whatever, but to the south of Scotland and England these observations, of course, do not apply, and I thank Canon Greenwell for so kindly noticing my paper.

I have now to describe another excavation, and I hope it will not weary the reader, for the subject is not only curious, but unique. In ploughing the highest point of the farm the tenant, Mr. Dawson, discovered charcoal in trenches, and made an exact drawing for me, which is here given. That it had been a huge construction of wood was evident, possibly a platform with huts or stores on it, placed on piles on the highest ground. The space covered was sixty yards by fifty yards. The spaces between what had been probably double rows of piles were nine feet apart, and the spaces filled with charcoal were about three feet wide (fig. 1).

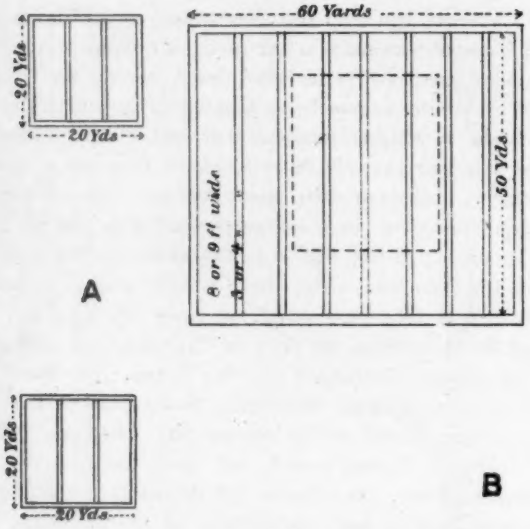


Fig. 1.—Sketch Plan of remains of wooden structures at Easterton of Roseisle.
A—Springs of Water. B—Natural Hollow.

The object of it seems to me clear. When the old loch of Spynie lay open to the sea, and the Lossie and the Spey poured into it, it must have been subject to great inundations. A heavy flood in the rivers, with an easterly gale and high tide, might easily raise the waters of the loch ten to twenty feet, which would cover all but the highest points of Roseisle and convert the ridges into islands. This, then, had most likely been a wooden platform, a city of refuge, as it were, amid the floods for the dwellers of the lower levels by the shores of the tidal loch.

It stands at a little higher elevation than the curious structure I have now to describe. About 400 yards west of cist and remains already

described in the July number of the *Reliquary* of last year the land terminates in a small ridge called Starwood. In a rabbit's hole at the south end of the ridge some burnt oats were scraped up, and I made a regular excavation of the place. We discovered in the side of the hill near the top a circular basin or pit (fig. 2). It was about ten feet wide at the top by 9 ft. and 4 ft. each way at the bottom, and 5½ ft. deep. It was built of large rough stones of the boulder type laid on a clay backing between them and the hard sand of the hill. It gave me the notion that it was the first idea of an arch

Fig. 2.—Circular Pit lined with rubble walling at Easterton of Roseisle.

reversed, as the sides were supported from the bottom, which was paved with large strong stones. The pit was full to the top with burnt oats and wood, mostly oak, but some of it seemed to be hazel or birch. There must have been a large wooden building over the pit, for the quantity of burnt oak and oats could only be accounted for in this way. The age of the work was fixed by the state of the wood, which was almost identical with black bog oak below the burnt surface. The working of the wood also was similar to that of the very early lake dwellings. Pointed stakes had been driven into the ground and supported by cross beams, which again had had floors of rude logs fixed to them by wooden pins driven into them by bored holes (fig. 3). The holes had not been made by any metal tool; they had probably been burnt out, the holes being wider at one side than at the other, and the pins, of which we found

several in their places, were also thicker at one end than at the other. The holes were so perfectly smoothed and polished that they could only have been made by fire, as no metal tool of early times could have done such work.

The deposits in the pit consisted of four layers of burnt oats and three or four layers of burnt wood. The immense amount of corn put the idea of a kiln out of the question, also the fire had consumed it from above,

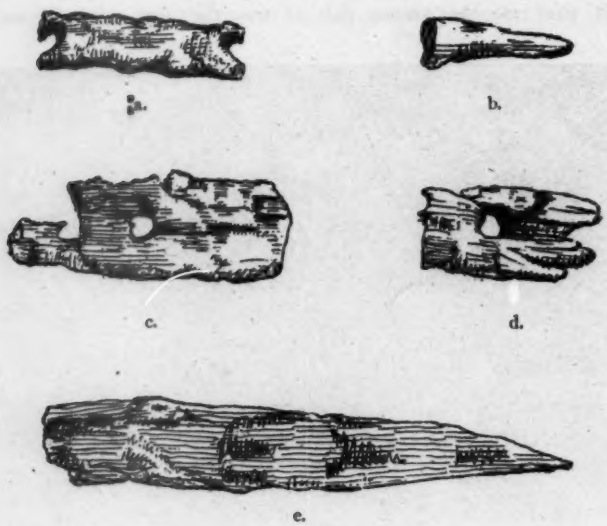


Fig. 3.– Fragments of wood-work found at Easterton of Roseisle.

(a) Portion of cross-beam with two holes.
(b) Wooden pin fitting into the hole of d.
(c) Portion of beam with two holes.
(d) Portion of beam with one hole.
(e) Portion of stake with sharpened point.
Scale, 1¼ in. = 1 ft.

and not from below, as six inches of burnt oats lay on the floor with no ashes under it. Few old kilns could dry more than a quarter of corn at one time, and here there had been fifty quarters, if not more. The position of this granary was very curious; it was on the slope of the ridge near the top, and the loch head came to the foot of the little hill. It would be a most convenient spot to load the canoes with grain, and yet to keep the corn beyond reach of damage by water.

The building had, no doubt, been the granary of the prehistoric people

whose pottery has already been described by me, but how it was constructed it is hardly possible to tell. A large building of wood had been above the pit, and this building had most likely contained floors on which the corn was stored, which would account for the four distinct layers of burnt wood and grain. Although the wall next the loch side had fallen away, I thought I could trace an entrance near the bottom. This raises the question, Was not the grain drawn down from above after the fashion of the modern grain elevator? Within fifty yards of this place Mr. Dawson found a stone-built cist with some bones in it, but nothing else; it had been paved below, and worked flints were lyjng all about the ridge.

This discovery seems to throw some light on the pits with the pottery, described in the *Reliquary* of January, and supposed to have been burial pits. It now seems likely that the pottery pits were wooden stores of some sort built above stone pits or cellars. The pottery pits, like the granary, had been set fire to from above, and burnt downwards; this was proved by the lower stones not having been injured by heat. The remains of the woodwork are of the same character as that of the early lake dwellings, as the pins, holes, and manner of fastening belong to that period. On the other hand, we must go to the storehouses on piles used by the Lapps for anything like the same description of store, but nothing of an exactly similar style of building is known in Scotland in the history of archæology so far as I am aware. I do not expect that anything further will be found, as the place has now been thoroughly examined. No refuse heap or midden has been got, or it might have revealed much, but many features must have disappeared, as the land has been under cultivation for very many years. The true story of the race of people whose remains have been found will never now be known, but the end had been a terrible tragedy. Some superior race had swooped down on them, not to plunder, but to destroy. A massacre on a great scale, a hurried burial of the dead, the firing of their poor dwellings and stores, the destruction of their corn, and the wreck of everything, adds one more pitiable story to the annals of the human race, one more tragedy to the records of time.

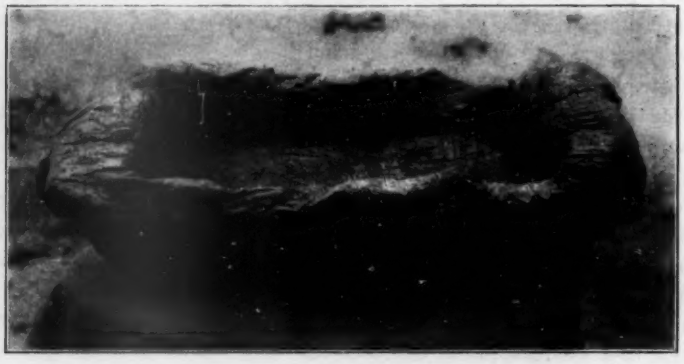
HUGH W. YOUNG, F.S.A. (Scot.)

WOODEN DISH LATELY FOUND IN THE HEBRIDES.

THE figure on p. 242 represents a wooden vessel which was found on 30th June last in a peat bog near Loch Eport, North Uist, Outer Hebrides. It was discovered by the workmen engaged in making a new road along Loch Eport Side as they were cutting through a rising ground of solid peat a little distance to the east of the Kelp Works. The vessel was lying in

a slanting position, embedded in the peat, at a depth of five or six feet from the surface, and having at least a corresponding depth of peat below it. It is obvious that it must have sunk from the surface at a time when the peat was in a more liquid condition.

The dish or vessel is 2 ft. 4 ins. long by 11 ins. broad, and is hollowed to a depth of 5 ins. It weighs about 30 lbs., its natural weight being increased by its sodden condition. At the underpart of each extremity there is a rudely shaped hollow, serving as a handle for lifting. The block of wood out of which the dish is made appears to be the root portion of a Scotch fir. As may be seen from the photograph, the work of shaping and hollowing out has been very roughly performed, apparently with a blunt tool.



Wooden Dish found near Loch Eport, North Uist.

As to its original uses, the country people of the district could offer no explanation beyond suggesting humorously that it was a "porridge dish." (It may be mentioned, however, that the inhabitants of Loch Eport Side are a recent immigration from another part of Uist.) The likeliest solution of the problem that occurs to me is that it was used for holding the compound known as "bog-butter." In the National Museum of Antiquities of Scotland there are four wooden vessels (see Catalogue, ME 166, 167, 174, and 222) containing bog-butter, all of which were found in similar situations to the one now described, viz., 166, "under 4½ ft. of peat in moss at Glen Gell, Morvern, Argyllshire;" 167, "in moss at Kyleakin, Skye," "under a depth of about 7½ ft. of peat;"[1] 174, "in a moss at

[1] This was one of "several kegs or small barrels of butter" found together. It may be added that "in close juxtaposition" with them was a bronze caldron. (*Proceedings of the Society of Antiquaries of Scotland*, vol. xix., pp. 309 *et seq.*)

Plockton, Lochalsh, Ross-shire;" and 222, "in a peat bank at Cunnister, North Yell (Shetland), at a depth of 3 ft. under the surface." In October, 1857, a barrel of bog-butter was also "discovered in a moss, where a man was digging peats, towards the Point of Sleat," in the Isle of Skye.[1] And in 1881 a creel of bog-butter was found "by peat cutters in the moss of Strathmore, parish of Farr, Sutherlandshire, under 3 ft. of peat."[2]

It is unnecessary to enlarge upon the question of "bog-butter," beyond saying that it was in common use in the Faroe Islands in the seventeenth century, and that it was made of "tallow principally obtained from sheep." About the same period it appears to have been used in Ireland, Scotland, and Finland. Further, it was purposely sunk in the earth or a peat moss in order to preserve it and improve its flavour.[3]

That the dish lately found in North Uist was intended for holding bog-butter is merely a suggestion, based chiefly on its situation, and partly on its appearance. Two objections may be urged against this theory. One is that the vessel in question was quite empty when discovered, whereas all the others on record were filled with this lard or "butter." Another objection is that in nearly every case the vessel has the shape of a barrel or keg. In one instance, however (ME 222 in the Edinburgh Museum), the butter is contained in a "large oval dish of wood," not very different in appearance from the one now shown.

[NOTE.—The dish was seen by myself a few days after its discovery at the shooting lodge of Langash, North Uist, on which occasion Mr. O. E. Part, tenant of the shootings, kindly assisted me in the measurement, and enabled my friend, Mr. Fraser, of the Caledonian Bank, Lochmaddy, to take the admirable photograph now reproduced. Since my return to Edinburgh I have received information from Mr. Fraser, Lochmaddy, which establishes the correctness of the theory I had advanced. Mr. Fraser writes:—"The old natives used these hollowed-out dishes for burying melted tallow to preserve it. One of them, exactly similar to the Loch Eport one, was dug up some years ago at Trumisgarry (at the north-western corner of North Uist) full of tallow." A dish cut out of a solid block of wood very similar to the one described above is illustrated in Sir Wm. Wilde's *Catalogue of the Museum of the Royal Irish Academy*, p. 209. It measures 1 ft. 7½ ins. by 11½ ins. by 3 ins., and was found in the bog of Moyntagh, parish of Drumcree, co. Armagh, in 1832. There are six such dishes in the Mus. R.I.A., and Sir Wm. Wilde classes them under "Kneading Troughs, Dishes, Bowls, Lossets, and Tables."]

DAVID MACRITCHIE.

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[1] *Proc. Soc. Ant., Scot.*, iii., p. 105. [2] *Ibid*, xvi., p. 223.

[3] See an instructive paper "On the Composition of Bog-Butter," by W. Ivison Macadam (*Proc. Soc. Ant., Scot.*, xvi., pp. 204 *et seq.*); also Debes' *Description of the Faroe Islands* (Sterpin's English translation, London, 1676, pp. 264-265).

Notices of New Publications.

"KOREAN GAMES, WITH NOTES ON THE CORRESPONDING GAMES OF CHINA AND JAPAN," by STEWART CULIN (University of Pennsylvania, 1895), we cordially recommend to our readers as being a conscientious study in a hitherto greatly neglected department of anthropology. The origin, significance, and transmission of toys and games is not only a fascinating study, but it opens up problems of wide importance, and it throws many side-lights on customs and beliefs which at first sight appear to be quite unrelated to each other.

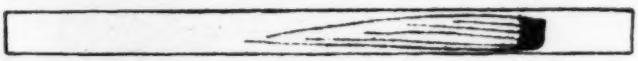
Mr. Stewart Culin has, for some time, been collecting specimens of toys and games for the Museum of Archæology in the University of Pennsylvania, of which Museum he is the director. We learn with pleasure that the well-known anthropologist, Mr. F. H. Cushing, of the Bureau of American Ethnology, is preparing a work on the games of the primitive American peoples; and the present volume may be regarded in the light of a precursor to this promised work, for though some ethnologists are inclined to dispute the Asiatic origin of the American aborigines, there can be little doubt that there has been a culture drift across the North Pacific; but its extent cannot at present be determined.

Korea, China, and Japan constitute a natural geographical region, and one within which there has been an interchange of culture; for Korean civilization, which was derived from China, was introduced into the Japanese Archipelago in the fourth century A.D. It must be remembered that, ethnologically, there is great diversity; the Koreans are more closely allied to the Japanese; but the latter, as well as the Chinese, are a very mixed people. The Koreans, being a less heterogeneous people, afford a very convenient starting-point for anthropological study, and, therefore, this investigation of their games is especially welcome.

It would be tedious to enumerate all the games; but the following will serve as a sample:—Kite-flying, tops, cats-cradle, leap-frog, skipping-rope, see-saw, tug-of-war, wrestling, battledore and shuttlecock, hand-clapping, counting-out, blind-man's buff, knuckle-bones, backgammon, chess, dominoes, playing-cards, etc. A large number of the Korean and Japanese games have a very familiar aspect to us, but some of them are much more varied than with us, for example, kite-flying and spinning tops; and especially varied are

the games played with boards and men or counters, the most popular of which is *nyout*, and the pebble game *pa-tok*, better known under its Japanese name of *go*.

Of the ninety-seven Korean games described by Mr. Culin, twenty-three may be referred to the arrow, employed as an implement of magic in divination. Among these he includes the Chinese game of dominoes, in which the duplication of the eleven pieces has hitherto remained unaccounted for. The Korean playing-cards furnish the most direct evidence in Asia of the ceremonial use of the arrow in divination, which afterwards became an amusement. They still bear representations of the feathers of the arrows from which they were derived, and their Chinese name varies only in tone from that of arrow, *tsin;* before playing, Chinese gamblers resort to a shrine of the God of War, and throw eighty numbered arrow lots (*i.e.*, narrow strips of paper of a particular form) to "divine" the lucky number. The *rationale* of the lottery, and the similar divinatory processes in which arrows are shaken at random from the lot tube (quiver), is very evident. For example, the heathen Arabs had a very popular gambling game—*meisir*—in which seven arrows were shaken from a quiver; the stakes were invariably camels. The history of the card games, in which the bundle of arrows, or their substitutes, are mixed (shuffled) and apportioned (dealt) at



Reverse of Korean Playing Card, reduced one-half linear.

random among the players is not yet thoroughly investigated. The common Japanese divining splints—*zeichiku*—are also certainly arrow derivatives. Korean playing-cards consist of long, narrow strips of oiled paper, bearing upon their face highly-conventionalised written characters, which indicate their value. A common size for the cards is 8 ins. long and $\frac{1}{4}$ in. broad. Some packs, at all events, have a queer conventional mark on the back, which is figured (fig. 120) but not explained. May it not be the vestige of the scar left by paring off the leaf of the reed which formed the shaft of the original arrow?

The careful comparisons of Korean with Japanese and Chinese games throws considerable reciprocal light on their origin and significance. The rare occasions on which Mr. Culin wanders further afield only make us wish that he had done so more frequently; but with such a mine in which to quarry, it would be ungracious to be greedy.

Those who are interested in this branch of anthropology should not fail to study this book, as it bears upon many of our European games—

kite-flying, the tug-of-war, counting-out, and the games with boards and men, and the dominoe and playing-card series. It is now recognised that kites were introduced into Europe from further Asia some three hundred years ago. When we turn to their place of origin we find they have a symbolic meaning, and often a ceremonial use. On some occasions a kite may symbolise the "external soul" of the flyer; at other times it may act as a "scape-goat" and bear away the year's misfortunes. There is much symbolism also in the square chess or draught-board. This is most clear in the Korean board for *pa-tok*, whose quarters are designated by the cosmical symbols. It is apparent in the divinatory games that the counts refer ultimately to people, and that the counters actually stand for men. In the *pachisi* game they are differentiated with the colours that are always used to symbolise the four quarters of the world.

The wonderful variety of tops and methods of spinning in Japan is very remarkable, if it be true, as the learned sinologue Gustav von Schlegel, of Leiden, informs us, that the top was introduced into Japan and China from Java, where it had been brought by the Dutch. The problems of the distribution and wanderings of games are many and difficult, and we may soon expect a great deal of further information on the subject now that observers are becoming aware of their interest.

Finally, it would be unfair not to thank the publisher for his enterprise in producing the work in so elegant a form, the unique feature in the book being that all the plates are *fac-similes* of coloured and plain drawings by a native Korean artist; some of the figures in the text are representations of toys and games in the Archæological Museum in Philadelphia, and the remainder are very clever sketches by Japanese artists. In a word, the book is valuable enough for the study and artistic enough for the drawing-room.

A. C. Haddon.

The "History of the Horn-Book," by Andrew W. Tuer, F.S.A. (Leadenhall Press), has a human interest about it which will appeal to others besides mere collectors and antiquaries. No doubt the School Board authorities of to-day will be shocked to find that our pious ancestors should have deemed it necessary to drag in the Lord's Prayer whilst teaching their children the alphabet, yet such appears to have been the custom during several centuries. Not only so, but the first line of the alphabet of the Horn-Book always commenced with a cross (whence the term "criss-cross row"), and the Lord's Prayer was preceded by the invocation, "In the name of the Father, and of the Son, and of the Holy Ghost. Amen." These devotional features are clearly survivals from pre-Reformation times,

and it is curious to note that the practice of commencing inscriptions with a cross and the use of the invocation just quoted may be traced back as far

Dutch Gingerbread Horn-Book, the wooden mould from which it was made belonging to Mr. G. van Rijn, of Rotterdam.

as the eighth or ninth century, there being several instances of this on the early inscribed and ornamental crosses at Llantwit Major and elsewhere in Glamorganshire. Whether any special appliance was used before the invention of printing for teaching the alphabet we have no means of knowing. The Ogam,[1] Minuscule,[2] and Runic[3] alphabets occurring on

Horn-Book of Queen Elizabeth, belonging to Lord Egerton of Tatton.

monuments and objects of the pre-Norman period do not seem to have been intended for purposes of instruction so much as to display the carver's

[1] At Kirk Michael, Isle of Man (discovered by Mr. P. M. C. Kermode).

[2] At Kilmalkedar (see Dr. G. Petrie's *Christian Inscriptions in the Irish Language*).

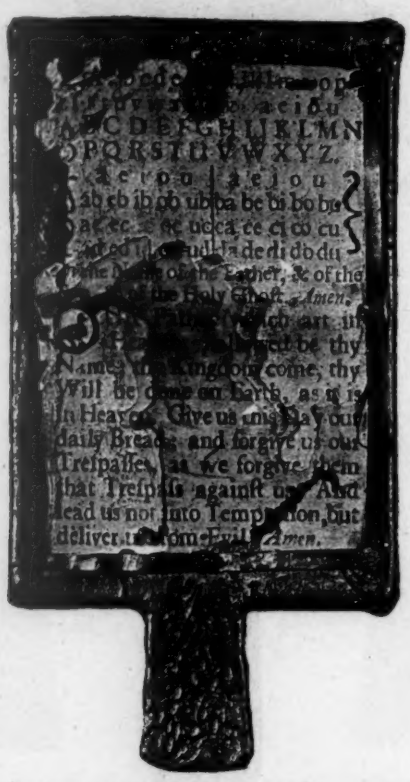
[3] Chiefly on bracteates, brooches, etc. (see Prof. G. Stephens' *Handbook of Runic Monuments*).

literary ability, and perhaps to act as charms, for it is certain that Runes at all events were looked upon by unlettered folk as having something uncanny about them.

Boxwood Horn-Book, belonging to Rev. E. S. Wilson, Winterton Vicarage, Doncaster.

The Horn-Book takes its name from the sheet of horn which was used to protect the printed alphabet from being soiled by the frequently grimy fingers of the youthful pupil. To prevent the leaf being crumpled it was backed by a slab of wood, and for convenience of holding in front of the learner it was provided with a handle, which was in one piece with the

rectangular wooden backing. The shape was suggestive of a battledore, and no doubt Horn-Books were frequently applied to this ungodly purpose when the master's back was turned. In later times this dual function was freely recognised, and Mr. Tuer gives some illustrations of the alphabetical battledores, which were common enough in Welsh Sunday schools half a century ago. It may be remarked, *en passant*, that the battledore, as



Horn-Book in the collection of Sir John Evans, K.C.B.
(Front.)

Mr. Tuer points out, is, properly speaking, a batlet or stout piece of wood squared, with a short handle in the same piece, used for beating clothes in the process of washing. The shape of the Horn-Book resembles that of the battledore for washing clothes rather than the modern battledore of racquet form used for playing with a shuttlecock.

The backs of the Horn-Books were frequently elaborately ornamented

with silver filigree work, as in some of the Elizabethan examples illustrated by Mr. Tuer, and in other cases had a figure of a mermaid or of St. George and the Dragon embossed on leather. In the celebrated Bateman Horn-Book, Charles I. on horseback takes the place of England's patron saint. This Horn-Book, which was described by a London daily paper as being stamped with the portrait of "a stout gentleman on a stumpy horse," was

Horn-Book in the collection of Sir John Evans, K.C.B.

disposed of at the Bateman sale for £65. The high prices that specimens like the Bateman Horn-Book can command have led many possessors of articles of the same kind, but of inferior interest and rarity, to set a most exaggerated value on their "geese which do not happen to be swans."

The Horn-Book reached the lowest stage of degradation when it was reproduced in gingerbread. Mr. Tuer heads his chapter on this branch of

the subject, "Gingerbread Horn-Books—Devouring the A B C!" Several of the wooden moulds for making eatable Horn-Books are still in existence, and even at the present day squares of gingerbread stamped with the letters of the alphabet from A to Z may be purchased at the shop of a Kensington confectioner.

The samplers of the present and last centuries, many of them beautiful examples of decorative needlework, combined instruction in embroidery with teaching the alphabet, and are thus sufficiently allied to the Horn-Book to justify Mr. Tuer in devoting some space to this branch of the subject.

The "History of the Horn-Book" is beautifully printed, profusely illustrated, and bound in parchment. Inside the covers of each volume are cunningly concealed several *fac-similes* of Horn-Books which are sufficiently like the real thing to deceive anyone but an expert. Mr. Tuer tells us that he has private marks on each for the purpose of exposing anyone who should be base enough to try and palm them off on to an unwary collector as genuine antiques.

Mr. Tuer's style is pleasant throughout, and he manages to make a subject, which in less capable hands might have been tediously wearisome, sufficiently amusing to please the general reader without sacrificing scientific accuracy to any appreciable extent. The illustrations by Phil May, Linley Sambourne, and others are, indeed, so amusing as to have nearly caused the staid reviewer in the *Athenæum* to have a fit.

We are indebted to Mr. Tuer's kindness for the use of the illustrations in this notice.

"A Scots Mediæval Architect," by P. Macgregor Chalmers, F.S.A. (Scot.), (Glasgow: William Hodge & Co.), is a reprint of the very interesting series of articles which appeared in "Scots Lore" under the same title. We know so little about the designers of the splendid ecclesiastical buildings of the Middle Ages, that every scrap of information which can be collected is of value. The architect who forms the subject of this monograph is John Morow (or Murray), who is stated in a black letter inscription still existing at Melrose Abbey to have been born in Paris, and to "have had in keeping all mason work" at St. Andrew's, Glasgow, Paisley, Nithsdale, and Galloway. Mr. Chalmers has succeeded in identifying the John Morow of the Melrose inscription with John Murray, of Fallohill, Sheriff of Selkirk, whose name first appears in history in 1479, and who was assassinated in 1510. A fully illustrated account is given of all the work attributed to John Morow, and each link in the chain of evidence by which his identity is established is well worthy of the most

careful study. "A Scots Mediæval Architect" should be read by everyone who associates the Gothic style with the noblest aspirations of Christian art in Great Britain. The relapse into sheer Paganism, which took place at the time of the Renaissance, lasted for nearly three centuries, and would have destroyed the national style completely had it not been for the genius of Sir Walter Scott, who threw the glamour of romance once more over such masterpieces of architecture as Melrose Abbey and Glasgow Cathedral. We owe a debt of the deepest gratitude to Mr. Macgregor Chalmers for helping to revive the Gothic feeling that has rendered the erection of some of the most appropriate and magnificent buildings ever designed for Christian worship possible, and for rescuing from oblivion the name of a prince amongst architects, who might otherwise never have received a niche in the temple of fame.

THE first volume of "THE ECCLESIASTICAL ARCHITECTURE OF SCOTLAND," by DAVID MACGIBBON and THOMAS ROSS (Edinburgh: David Douglas), has recently been issued. A good deal of the material now placed before the public was collected by the authors whilst engaged in preparing their "Castellated and Domestic Architecture of Scotland," and in order to make the work as complete as possible, large use has been made of Sir Henry Dryden's hitherto unpublished drawings of the churches of Orkney and Shetland. The authors have also availed themselves of the information contained in the quaint and charming writings of the late Mr. T. S. Muir, an enthusiast who almost stands alone amongst ecclesiologists in having had the courage to visit those "deserts in the ocean" which the early Christian saints especially selected as the sites of their churches on account of the protection afforded by their inaccessible position on islands far from the mainland, and where a boat often could not effect a landing for months together.

The want of a scientifically arranged summary of all that is known on the subject of the ecclesiastical architecture of North Britain has long been felt, and Messrs. Macgibbon and Ross have succeeded in producing a valuable standard work to supply this want. Such a book should be fully illustrated with plans, sections, and details all drawn to scale, supplemented by general views of the buildings described. In this respect we cannot give the authors greater praise than by saying that the high standard they set up for themselves in their "Castellated and Domestic Architecture of Scotland" has been fully maintained in the present case.

In the "Introduction" no attempt is made to claim for Scotland the invention of a new style, although two distinct phases of artistic development are to be detected, "one comprising the rise and decline of Celtic

art in early Christian times, and the second allied to the various stages of European culture." Now, it is a curious fact that, notwithstanding the almost passionate love of ornament which characterises the Celtic works of art in sculptured stone, in metal work, and in the illuminated MSS., the churches of the pre-Norman period in Scotland, as far as the existing evidence goes, were totally devoid of decorative features of any kind. The authors say, "The earliest examples of anything like ornament in Scottish churches within the historic period are undoubtedly the outcome of the Roman influence introduced under the Normans."

Extreme simplicity of ground plan, smallness of wall openings (whether windows, doors, or chancel arches), and entire absence of moulded or sculptured details, seem to be the leading characteristics of the churches of Celtic descent. Then comes a Transitional group of buildings, including the towers at Abernethy, Restennet, and St. Andrew's, in which both Celtic and Norman influence can be traced.

There is nothing to differentiate the highly decorated twelfth century buildings in Scotland, such as the churches of Leuchars or Dalmeny, from similar Norman work in England, and the massive incised piers of Dunfermline present obvious affinities with those of Lindisfarne and Durham. Some of the twelfth century towers of the Scottish churches, however (especially those at Dunblane, Muthill, and Dunning), exhibit survivals from the Romanesque style corresponding to Saxon in England. These towers, which are confined to Perthshire, were intended partly to be used for defensive purposes in case of need, like those found in Pembrokeshire. "They are," we are told, "extremely simple in design, being square on plan, and carried up, without break or buttress, to the parapet, where they were finished off with a gabled roof, forming the saddleback arrangement preserved at Muthill." The windows in the topmost stage have a mid-wall baluster like the Saxon windows in England. The first volume brings us as far as the end of the Transitional Norman period. We shall look forward to being shown, in the succeeding volumes, how the various phases of the Pointed style afforded the native Scottish architects a better opportunity for developing their national characteristics than heretofore.

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